<table>
<thead>
<tr>
<th><strong>Module Code</strong></th>
<th>CEU11E09</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Module Name</strong></td>
<td>Engineering Design I: Graphics and CAE</td>
</tr>
<tr>
<td><strong>ECTS Weighting</strong></td>
<td>5 ECTS</td>
</tr>
<tr>
<td><strong>Semester taught</strong></td>
<td>Semester 2</td>
</tr>
<tr>
<td><strong>Module Coordinator/s</strong></td>
<td>Assistant Prof. Bidisha Ghosh (<a href="mailto:bghosh@tcd.ie">bghosh@tcd.ie</a>)</td>
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</tbody>
</table>

**Module Learning Outcomes** with reference to the [Graduate Attributes](#) and how they are developed in discipline:

Upon completion of this module, students will be able:
- LO1. To create, develop and draw two-dimensional images of objects by using projections using both hand-drawing & CAD software;
- LO2. To identify and interpret dimensioned, two-dimensional representations of objects;
- LO3. To communicate a design idea using visualisation tools.

**Graduate Attributes: levels of attainment**
- To act responsibly - Enhanced
- To think independently - Enhanced
- To develop continuously - Enhanced
- To communicate effectively - **Introduced**

- Appreciation of aesthetics & creativity in engineering design
- Multi-view Projection
- Isometric Projection
- Dimensioning
- Reverse Engineering & Assembly
- Analysis of a chosen design object
Teaching and Learning Methods

This module is taught using a combination of lectures, laboratories, individual and group assignments.
### Assessment Details

Please include the following:

- **Assessment Component**
- **Assessment description**
- **Learning Outcome(s) addressed**
- **% of total**
- **Assessment due date**

<table>
<thead>
<tr>
<th>Assessment Component</th>
<th>Assessment Description</th>
<th>LO Addressed</th>
<th>% of total</th>
<th>Week due</th>
</tr>
</thead>
<tbody>
<tr>
<td>Examination</td>
<td>Written examination</td>
<td>1,2</td>
<td>60%</td>
<td>Exam period</td>
</tr>
<tr>
<td>Design laboratories</td>
<td>Hand-drawing &amp; software laboratories</td>
<td>1,2</td>
<td>20%</td>
<td>Wk 3,4,5,6,9,10</td>
</tr>
<tr>
<td>Engineering Design Portfolio</td>
<td>Assignment</td>
<td>3</td>
<td>20%</td>
<td>Wk 12</td>
</tr>
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</table>

### Reassessment Requirements

### Contact Hours and Indicative Student Workload

**Contact hours:** 40hrs (1 hr lecture + 3hrs lab per week)

- **Independent Study (preparation for course and review of materials):** 40 hrs
- **Independent Study (preparation for assessment, incl. completion of assessment):** 30 hrs

### Recommended Reading List

- Technical Draughtsmanship, Éanna O Broin, Gill and Macmillan (Ireland)1986
- 100 CAD Exercises – Learn by Practicing!, Jason Artes

### Module Pre-requisite

None

### Module Co-requisite

None

### Module Website


### Are other Schools/Departments involved in the delivery of this module? If yes, please provide details.

None

### Module Approval Date

Approved by

Academic Start Year

September 9th 2019